

Negative Networks in Education: Egocentric Network Analysis of Teacher Victimization

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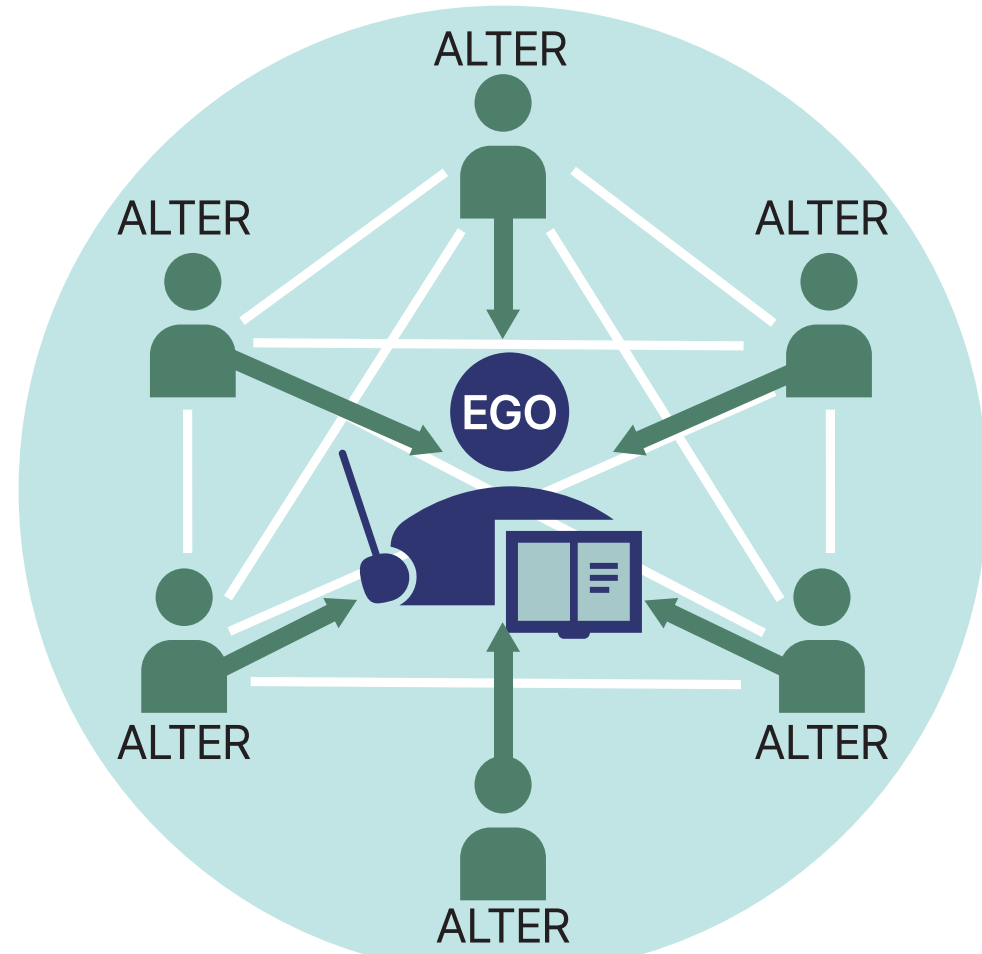


Introduction

- While research in education has traditionally examined positive or neutral networks—peer collaboration, social capital, and professional learning—less attention has been paid to negative network ties that exacerbate occupational stress.
- Drawing on egocentric network analysis, this study investigates the structural configuration of teachers' networks with aggressive and violent students.
- We integrate network theory (Brass, 2022; Borgatti & Halgin, 2011) and the Job Demands-Resources (JD-R; Bakker & Demerouti, 2007) model to conceptualize these negative ties as stress-inducing network demands.
- This lens offers novel insight into how aggression-related network characteristics shape burnout, psychological distress, and turnover intentions among educators.

Methods

- Design: Egocentric network and path analysis
- Participants: 507 K-12 teachers (42 states, U.S.)
- Network elicitation: Teachers listed up to 6 students who had exhibited aggressive or violent behaviors
- Network variables:
 - Centrality: Number of aggressive/violent student alters (Freeman, 1979)
 - Density: Connections among alters (Chung et al., 2005)
 - Racial Homophily: EI-index (Coleman, 1964)



- Outcome variables: Burnout (MBI), Psychological Distress (DASS-10), Turnover Intention
- Analytical tools: Python for network metrics; R (lavaan for SEM/path analysis)

Results



90.1% of our participants noted having at least one student displaying violent and aggressive behaviors directed at teachers.

1,703 students who showed aggressiveness and violence toward teachers were reported.

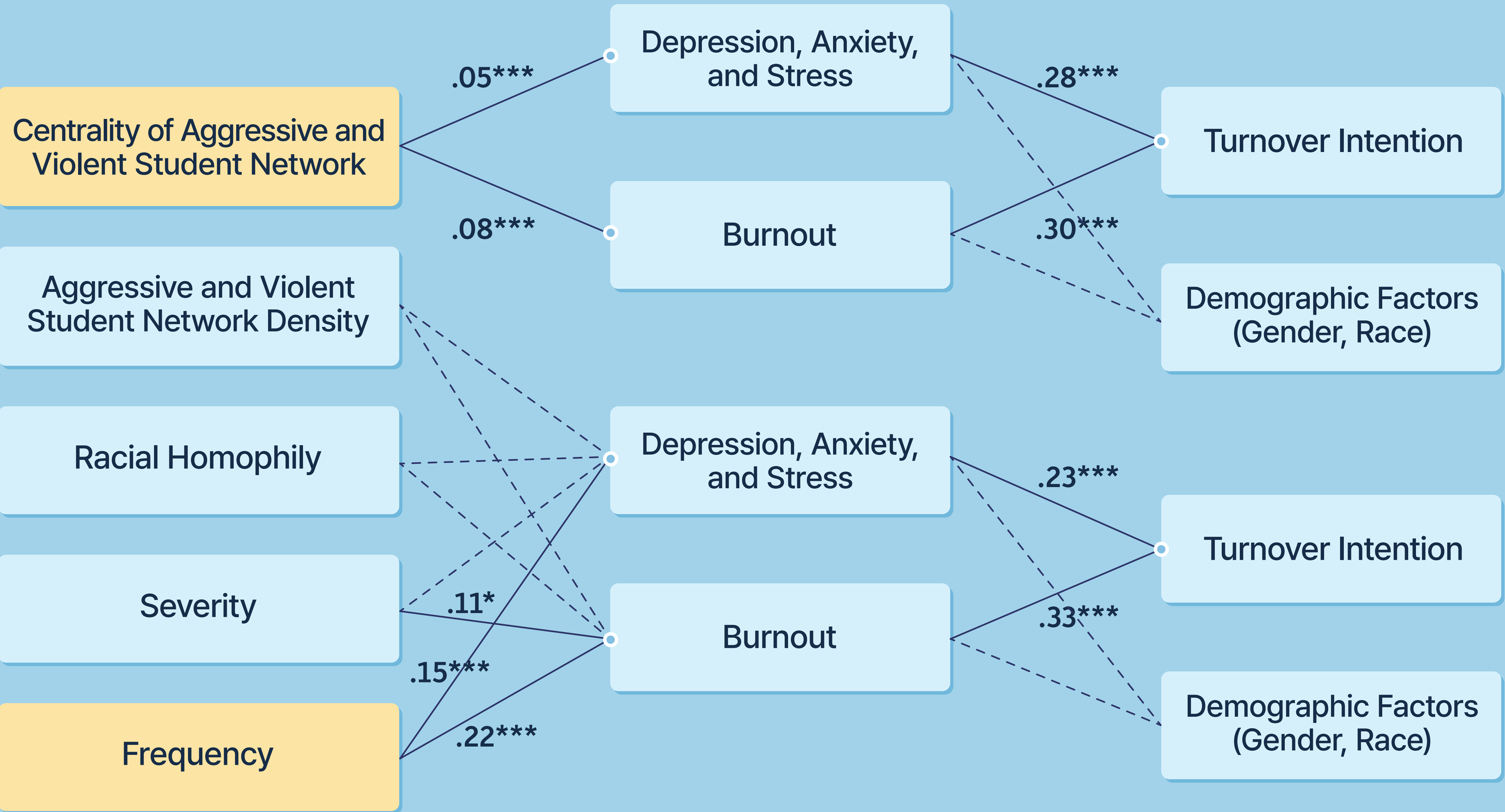
3.35 The Number of Students Displaying Violent and Aggressive Behaviors Toward Teachers (Centrality):

0.24 The Degree of the Mutual Connections Among Students Identified by Teachers (Density):

0.15 Racial and Ethnic Homophily: (no tendency of homophily)

1.5 Perceived Severity (1-4):

2.22 Perceived Frequency (1-4):



Discussion

- **Negative Ties as Stress Structures:** Teachers' networks with aggressive students function as negatively valenced ties, aligning with network theory (Brass, 2022; Borgatti & Halgin, 2011)'s emphasis on how social structure shapes outcomes and the JD-R model (Bakker & Demerouti, 2007), which positions such ties as job demands contributing to burnout and distress.
- **Centrality → Burnout/Distress:** The number of aggressive students (centrality) uniquely predicts psychological distress and burnout, extending negative tie theory into K-12 education.
- **Low Density, High Fragmentation:** The low density of student-student ties (.24) suggests aggression toward teachers is not typically coordinated or peer-reinforced, unlike in bullying contexts. This isolates the teacher and exacerbates individualized stress.
- **Frequency > Severity:** Frequent and low-severity aggression better predicts distress pointing to chronic exposure effects consistent with cumulative stress frameworks (McGonagle & Kessler, 1990).
- **Implications:** This study calls for rethinking occupational stress through network lenses, especially in service professions where negative ties cannot be severed (e.g., mandatory student contact).
- **Broader Impact:** Understanding stress not only as an individual or organizational, but as a networked experience, opens new directions for research on workplace violence, retention, and well-being.

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